IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re the Application of: **HAMAGUCHI, et al.**

Group Art Unit:**2635**

Serial No.: **09/582,874**

Examiner: **Scott D. AU**

Filed: **July 6, 2000**

P.T.O. Confirmation No.: 3201

For: **ALERTING DEVICE AND RADIO COMMUNICATION DEVICE HAVING THE ALERTING DEVICE**

SUBMISSION OF APPEAL BRIEF

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

December 13, 2005

Sir:

Submitted herewith is an Appeal Brief in the above-identified U.S. patent application.

Also enclosed is a check in the amount of **$500.00** to cover the cost of filing this Appeal Brief. In the event that any additional fees are due with respect to this paper, please charge Deposit Account No. 01-2340.

Respectfully submitted,

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Enclosures: Appeal Brief; and check for **$500.00**

THE UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

APPEAL BRIEF FOR THE APPELLANT

Ex parte Toshihide HAMAGUCHI et al.

ALERTING DEVICE AND RADIO COMMUNICATION DEVICE HAVING THE ALERTING DEVICE

Serial Number: 09/582,874

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Group Art Unit: 2635

Examiner: Scott D. AU

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Atty. Docket No. 000831

THE UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Appeal No:

In re the Application of: **HAMAGUCHI, Toshihide, et al.**

Group Art Unit: **2635**

Serial No.: **09/582,874**

Examiner: **Scott D. AU**

Filed: **July 6, 2000**

P.T.O. Confirmation No.: 3201

For: **SOLID PREPARATION PACKAGING APPARATUS AND PACKAGING PAPER ROLL FOR SOLID PREPARATION**

APPEAL BRIEF

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Date: December 13, 2005

Sir:

This is an appeal from the Office Action dated July 11, 2005 in which claims 1-6 and 8-17 were finally rejected.

A Notice of Appeal was timely filed on October 25, 2005.

I. REAL PARTY IN INTEREST

The real party in interest is the assignee of the subject application, which is:

SANYO ELECTRIC CO., LTD.
5-5, Keihanhondori 2-chome
Moriguchi-shi
Osaka, Japan

II. RELATED APPEALS AND INTERFERENCES

Appellants know of no other appeals or interference proceedings related to the present appeal.

III. STATUS OF CLAIMS

Claims 1-6 and 8-17 on appeal have been finally rejected and are the subject of this appeal.

Claims 7-8 have been canceled.

IV. STATUS OF AMENDMENTS

All amendments have been entered.

V. SUMMARY OF THE CLAIMED SUBJECT MATTER

The present invention relates to notifying devices for use in portable telephones, pagers, and similar wireless communications systems for notifying the user of incoming calls (specification, pg. 1, lines 7-10).

The notifying device 2 of claim 1 on appeal comprises a vibrator 3 to be resonated by a drive signal Dr fed thereto, and a signal preparing circuit 5 for feeding the drive signal Dr to the vibrator 3 at the time of a notifying operation, wherein a frequency of the drive signal Dr varies in a range including a resonance frequency Fm of the vibrator 3 in the form of sawtooth waves, the sawtooth waves comprising a portion inclined with respect to a time base and a portion perpendicular to the time base (FIG. 5(a); specification, pg. 22, line 23 to pg. 23, line 13).

Claim 10 on appeal recites a wireless communications system comprising a notifying device 2 for notifying the user of incoming calls, in which the notifying device 2 comprises the vibrator 3 recited in claim 1 on appeal (FIG. 13; Table 1; specification, pg. 26, line 5 to pg. 27, line 12).

Claim 11 on appeal recites a wireless communication system having incorporated therein a notifying device 2 for performing different kinds of notifying operations including notification of incoming calls, the notifying device 2 comprising a vibrator 3 to be resonated by a drive signal Dr fed thereto, and a drive signal feed circuit 5 for feeding the drive signal to the vibrator, wherein the drive signal feed circuit 5 comprises: command signal preparing means (control circuit 54; FIG. 14; specification, pg. 31, lines 4-8) for preparing notification command signals

which are different for different contents of notification in conformity with the content, and drive signal preparing means (control signal preparing circuit 72; FIG. 19; specification, pg. 31, lines 4-8) operative in response to the notification command signal to prepare a drive signal which has a frequency which varies in a range including a resonance frequency of the vibrator in the form of sawtooth waves, the sawtooth waves comprising a portion inclined with respect to a time base and a portion perpendicular to the time base (FIGS. 14, 16(a), 16(b), 17(a), 17(b), 17(c), 18(a), 18(b) and 18(c); specification, pg. 29, line 12 to pg. 30, line 7; pg. 31, line 4 to pg. 34, line 15).

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

1. Whether or not claims 1-3 and 10-16 on appeal are unpatentable under 35 U.S.C. § 103(a) over U.S. Patent 5,828,295 to Mittel et al. (hereafter, "**Mittel et al.**") in view of U.S. Patent 4,727,331 to Hegeler (hereafter, "**Hegeler**").

2. Whether or not claims 4-6 on appeal are unpatentable under 35 U.S.C. § 103(a) over **Mittel et al.** in view of **Hegeler**, and further in view of U.S. Patent No. 3,623,064 to Kagan (hereafter "**Kagan**").

3. Whether or not claims 9 and 17 on appeal are unpatentable under 35 U.S.C. § 103(a) over **Mittel et al.** in view of **Hegeler**, and further in view of U.S. Patent 6,208,237 to Saiki et al. (hereafter, "**Saiki et al.**").

VII. ARGUMENT

1. CLAIMS 1-3 AND 10-16 ON APPEAL ARE PATENTABLE OVER MITTEL ET AL. IN VIEW OF HEGELER UNDER 35 U.S.C. §103(a).

Mittel, et al. discloses a mode tracking transducer driver (100) for a non-linear electromagnetic transducer (102) which includes a voltage controlled oscillator (104) coupled within a phase lock loop to a transducer driver (106) and a mode detector (112, 108). The voltage controlled oscillator (104) generates a variable frequency output signal, and is responsive to a frequency of the output signal. The transducer driver (106) generates a transducer drive signal (502) which is coupled to the non-linear electromagnetic transducer (102) to generate a tactile alert. The mode detector (112, 108) detects a mode change between at least the first operating mode and the second operating mode of the non-linear electromagnetic transducer (102), and in response thereto generates the frequency control signal (118) which establishes a quasi-resonant frequency (204) at which the tactile energy delivered by the non-linear electromagnetic transducer (102) is maximized.

During prosecution, Appellants argued that **Mittel et al.** fails to disclose this feature. It should be noted that independent claims 1, 10 and 11 on appeal are directed to producing resonance with a definite period to ensure notification without discomfort, and therefore recite "a frequency of the drive signal varies within a range including a resonance frequency of the vibrator in the form of sawtooth waves, the sawtooth waves comprising a portion included with respect to the time base and a portion perpendicular to the time base."

The Examiner has admitted that **Mittel et al.** "did not explicitly disclose" this feature, but has cited **Hegeler** for disclosing a frequency of a vibrator in the form of sawtooth waves.

Hegeler discloses a warning tone signal generator which generates pulses of constant pulse frequency but varying duty cycle. **Hegeler** also discloses converting square wave pulses to sawtooth-shaped pulses.

This is in contrast to the present invention, in which the frequency varies in the form of sawtooth waves, as recited in independent claims 1 and 10-11 on appeal. FIG. 5(a) in the instant application shows how frequency varies with time (sawtooth waveforms, in this case). Both **Mittel et al.** and **Hegeler** teach waveforms of amplitude which varies with time, not how frequency varies with time. As noted above, **Hegeler** teaches a constant pulse frequency.

In particular, **Hegeler** discloses, as stated by the Examiner, converting square wave pulses to sawtooth-shaped pulses in order to enhance the dynamic range (column 4, lines 1-15). In **Hegeler**, pulse duration t of the square wave pulses varies, but frequency F (=1/T) is constant (column 3, line 50 to column 4, line 1). These square wave pulses are converted to sawtooth-shaped pulses. The pulse frequency F is not affected by the wave-shaping circuit 15 (column 4, lines 13-15), and therefore frequency F (=1/T) of the sawtooth-shaped pulses is constant. Thus, the teaching of **Hegeler** differs from that of claims 1, 10 and 11 of the instant application. **Hegeler** fails to disclose or suggest that the frequency caries in the form of sawtooth waves.

2. CLAIMS 4-6 ON APPEAL ARE PATENTABLE OVER MITTEL ET AL. IN VIEW OF HEGELER AND FURTHER IN VIEW OF KAGAN UNDER 35 U.S.C. §103(a).

Kagan discloses a personal paging device having a call signal receiver which generates, when activated, a train of regularly spaced electrical pulses having a period of $T_1 + T_2$ controlling an electric vibrator. The vibrator comprises an electric motor which receives the pulse train and periodically accelerates a cyclicly mounted mass to produce, as a result of the reaction forces developed, tactually sensible reaction vibrations in the device. In a primary embodiment, the mass is eccentrically mounted so as to additionally produce tactually sensible variations at frequencies which are distinguishable from the said reaction vibrations.

Kagan, like the other cited references, fails to teach, mention or suggest a frequency which varies over time in the form of sawtooth waves, as recited in claim 1 on appeal, from which claims 4-6 depend.

3. CLAIMS 9 AND 17 ON APPEAL ARE PATENTABLE OVER MITTEL ET AL. IN VIEW OF HEGELER AND FURTHER IN VIEW OF SAIKI ET AL.

Saiki et al. discloses an electromagnetic transducer having a diaphragm and a magnetic circuit, wherein the magnetic circuit includes a magnet, a plate and a yoke, and the driving unit is an electrodynamic unit which generates a driving force by means of a voice coil inserted in a magnetic gap of the magnetic circuit unit and fixed to the diaphragm at its one end.

Saiki et al., like the other cited references, fails to teach, mention or suggest the limitations of claims 1 and 11 on appeal, from which these claims respectively depend.

For the above reasons, The Board of Patent Appeals and Interferences is therefore respectfully requested to reverse the Examiner's rejection of claims 1-6 and 8-17 on appeal under 35 U.S.C. § 103(a) and pass this application to issue.

In the event this paper is not timely filed, Appellant hereby petitions for an appropriate extension of time. The fee for any such extension may be charged to our Deposit Account No. 01-2340, along with any other additional fees which may be required with respect to this paper.

Respectfully submitted,

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Enclosure: Claims Appendix

VIII. CLAIMS APPENDIX

Claim 1 (previously presented) A notifying device comprising a vibrator to be resonated by a drive signal fed thereto, and a signal preparing circuit for feeding the drive signal to the vibrator at the time of a notifying operation, wherein a frequency of the drive signal varies in a range including a resonance frequency of the vibrator in the form of sawtooth waves, the sawtooth waves comprising a portion inclined with respect to a time base and a portion perpendicular to the time base.

Claim 2 (original) A notifying device according to claim 1 wherein the variation of the frequency of the drive signal corresponds to a variation in the resonance frequency of the vibrator due to tolerances of specifications on which the resonance frequency is dependent.

Claim 3 (previously presented) A notifying device according to claim 1 wherein the resonance frequency of the vibrator is a low frequency of up to hundreds of hertz, and the vibration of the vibrator has at the resonance frequency an amplitude generally perceivable by the human body.

Claim 4 (previously presented) A notifying device according to claim 1 wherein the drive signal has an alternating waveform of rectangular waves or sine waves having a frequency periodically varying at 0.5 to 10 Hz.

Claim 5 (original) A notifying device according to claim 4 wherein the frequency of the drive signal periodically varies at 1.37 to 2.98 Hz.

Claim 6 (original) A notifying device according to claim 5 wherein the frequency of the drive signal periodically varies at 2.18 Hz.

Claims 7-8 (canceled).

Claim 9 (previously presented) A notifying device according to claim 1 wherein the vibrator comprises a casing, a diaphragm having a fixed end on an inner peripheral wall of the casing, a magnet attached to a free end of the diaphragm, and a coil disposed as opposed to the magnet, and the drive signal is fed to the coil.

Claim 10 (previously presented) A wireless communication system comprising a notifying device for notifying the user of incoming calls, the notifying device comprising a vibrator to be resonated by a drive signal fed thereto, and a signal preparing circuit for feeding the drive signal to the vibrator at the time of a notifying operation, wherein a frequency of the drive signal varies in a range including a resonance frequency of the vibrator in the form of sawtooth waves, the sawtooth waves comprising a portion inclined with respect to a time base and a portion perpendicular to the time base.

Claim 11 (previously presented) A wireless communication system having incorporated therein a notifying device for performing different kinds of notifying operations including notification of incoming calls, the notifying device comprising a vibrator to be resonated by a drive signal fed thereto, and a drive signal feed circuit for feeding the drive signal to the vibrator, wherein the drive signal feed circuit comprises:

command signal preparing means for preparing notification command signals which are different for different contents of notification in conformity with the content, and

drive signal preparing means operative in response to the notification command signal to prepare a drive signal which has a frequency which varies in a range including a resonance frequency of the vibrator in the form of sawtooth waves, the sawtooth waves comprising a portion inclined with respect to a time base and a portion perpendicular to the time base.

Claim 12 (original) A wireless communications system according to claim 11 wherein the drive signal prepared by the drive signal preparing means varies in frequency continuously in conformity with the notification command signal or intermittently at a specified period in conformity with the notification command signal.

Claim 13 (original) A wireless communications system according to claim 11 wherein the drive signal prepared by the drive signal preparing means varies in frequency at a specified period in conformity with the notification command signal.

Claim 14 (previously presented) A wireless communications system according to claim 11 wherein the variation of frequency of the drive signal prepared by the drive signal preparing means corresponds to a variation in the resonance frequency of the vibrator due to tolerances for specifications which govern the resonance frequency.

Claim 15 (previously presented) A wireless communications system according to claim 11 wherein the resonance frequency of the vibrator is a low frequency of up to hundreds of hertz, and the vibration of the vibrator at the resonance frequency has an amplitude generally perceivable by the human body.

Claim 16 (previously presented) A wireless communications system according to claim 11 wherein the command signal preparing means prepares an incoming call notifying command signal for notifying the user of an incoming call, a caller notifying command signal for distinguishing callers, and/or a mode notifying command signal for notifying the user of an operation mode of the system.

Claim 17 (previously presented) A wireless communications system according to claim 11 wherein the vibrator of the notifying device comprises a casing, a diaphragm having a fixed end on an inner peripheral wall of the casing, a magnet attached to a free end of the diaphragm, and a coil disposed as opposed to the magnet, and the drive signal is fed to the coil.

IX. EVIDENCE APPENDIX

None.

X. RELATED PROCEEDINGS APPENDIX

None.